UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,384	05/02/2001	Brian Swetland	04676P005X	8074

7590   07/30/2004

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EXAMINER
VO, TED T

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-19* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-15, 17 and 18* is/are rejected.

7)☐ Claim(s) *16 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *6, 7*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the Applicants' amendment filed on March 8, 2004, responding to the

Office action, dated 11/15/03.

Claims 1-10 are canceled and new Claims 11-19 are added.

The amendment necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

The amendment amends the specification in response to objection to the specification in the

previous office action. Accordingly, the objection to the specification is withdrawn.

Claims 11-19 are pending in this application.

Response to Arguments

2.   Applicant's arguments in Remarks section (pages 13-14) with respect to new Claims 11-19 have

been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for

the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a
printed publication in this or a foreign country, before the invention thereof by the applicant for a
patent.

4.   Claim 11 is rejected under 35 U.S.C. 102(a) as being anticipated by Yuhder Lin, "The Design and

Implementation of Jato: A New Binary File Format for Java", June 2000 (hearafter: Lin).

Given the broadest reasonable interpretation of followed claims in light of the specification.

<u>As per claim 11</u>: Lin discloses a desktop PC environment as a Host OS (Page 2, Figure 1) downloading server level applications such as Java classes (Figure 1). Lin incorporates the Host OS with system, Jato system (Page 50, Figure 7) and the conversion of classfiles prior transmission to a JVM (Page 50, lines 1-8). The mechanism as discussed (Figure 7) has means of a portal server.

Lin discloses claimed limitation: "*A portal server to retrieve classfiles from an Internet site on behalf of a data processing device* (JVM in the desktop PC), *the data processing device comprising a processor for processing program code and interpreter module* (JVM) *for interpreting classfiles,* (See page 2, Figure 1: Host OS, and page 50, Figure 7),

where the portal server comprises a content conversion module to analyze and convert the classfiles prior to transmission to the data processing device (See page 50, lines 1-8, "conversion overhead", see Figure 7: CLASS files → class2jato), *the conversion comprising rearranging elements of two or more classfiles to form a unified programming object, the elements including a plurality of constants pool entries and one or more methods and/or fields* (See page 61, section 3.2: "share the same constant pool, to remove more redundancies", see page 69, first paragraph, "Jato file format, see page 41, Figure 5: the left flow);*

wherein after the portal server generates the unified programming object, it transmits the unified programming object to the data processing device." (See page 50, Figure 7, Jato files → JVM (Modified) or → JatoClassloader).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 12-15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuhder Lin,

"The Design and Implementation of Jato: A New Binary File Format for Java", in view of Bradley et al.,

"JAZZ: An Efficient Compressed Format for Java Archive Files", November 1998.

As per claim 12:

Lin's mechanism (re: Lin: Figure 7) and conversion class files prior transmission to a JVM (re: Lin:

page 50, lines 1-8) has means of a portal server.

Lin does not explicitly disclose limitation of Claim 12.

Bradley discloses, "*The system as in claim 11 wherein, to rearrange the elements of the two or*

more classfiles, the content conversion module combines redundant constant pool entries from said two

or more classfiles to form a global constant pool entry in a shared constant pool within said unified

programming object" (re: Bradley: figure 1, Jazz file: Unified constant pool, see page 2, second column,

indent 5).

However, Lin' conversion of class files discloses merging constant pools, and Lin suggests the

teaching of Bradley (re: Lin: page 21, JAZZ [BRHO98]) as being achieved with high compression rate.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Lin and the unified constant pool format of Bradley.

Doing so would conform to a requirement format for a class loading policy in a data processing device

and also achieve high compression rate.

As per claim 13: Bradley further discloses, "*The system as in claim 12 wherein combining further*

comprises: rewriting said global constant pool entries to point to elements contained within said unified

programming object (re: Bradley: Figure 1, Jazz file, "Unified Constant Pool" area), *said elements*

corresponding to elements contained in said one or more class files and previously identified by said one

or more redundant constant pool entries" (re: Bradley: Figure 1, Jazz file, "Method" and "Class" area).

It would have been obvious to a person of ordinary skill in the art at the time the invention was

made to further include the rewriting the merged elements into a Jazz file format as disclosed by Bradley

to form a highly achieved class structure which conforms to the loading policy of class loading files. .

As per claim 14: Bradley further discloses, "*The system as in claim 13 wherein one of said global*

constant pool entries is a methodref entry and said element identified by constant pool entry is a method

copied to said unified programming object from said one or more class files" (re: Bradley: See Figure 1,

Jazz file format, where each of elements in Unified constant Pool references a method entry of a merged

method or class in the Jazz file).

It would have been obvious to a person of ordinary skill in the art at the time the invention was

made to further include the teaching referencing of constant pools as shown in the Jazz file of Bradley for

conforming to a definition of a constant pool, where each of elements in a constant pool references a

method or a class.

As per claim 15: Bradley further discloses, "*The system as in claim 14 wherein, to rearrange the*

elements of the two or more classfiles (re: Bradley: See Figure 1, Jazz file format shows merged methods

or classes in the Jazz file), *the content conversion module converts numeric references to local entries*

within a bytecode in said method to pointers to global constant pool entries" (re: Bradley: page 4, right

column first paragraph, "Huffman table which maps constant to variable length code...Any time a

reference to a constant pool entry is need, the appropriate variable length Huffman code is used";

furthermore, see section 3.4, Instruction Format).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to

further include for causing the arrangement of merged classes having the structure that is the same way

with a standard class file so that when executed, it must be the same way as a standard class file.

As per claim 17: Bradley further discloses, "*The system as in claim 13 wherein one of said global*

constant pool entries is a fieldref entry and said element identified by constant pool entry is a field copied

to said unified programming object from said one or more class files" (re: Bradley: See Figure 1).

It would have been obvious to a person of ordinary skill in the art at the time the invention was

made to further include the teaching constant pool entries as shown in the Jazz file of Bradley for

conforming to a structure requirement in a class file consisting of constant pool and classes and method

so that when executed, it must be the same way as a standard class file.

As per claim 18: Bradley further discloses, "*The system as in claim 11 wherein, to rearrange the*

elements of the two or more classfiles, the content conversion module validates said two or more class

files before mapping said elements to form said unified programming object" (re: Bradley: see section 3.3,

second column, particularly "Preserving Java Semantics").

It would have been obvious to a person of ordinary skill in the art at the time the invention was

made to further include the teaching validating of Bradley for conforming to syntax and semantics

requirements, and thus handling errors before execution.

Allowable Subject Matter

7.   Claims 16 and 19 are objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and any

intervening claims.

As per Claim 16: The cited prior arts of records, including the prior art of record Lin alone or in

combination with Bradley, fail to teach at least features of Claim 16: "*the content conversion module*

converts an exception table associated with said method to references to jop objects instead of numeric references to addresses of bytecodes".

As per Claim 19: The cited prior arts of records, including the prior art of record Lin alone or in combination with Bradley, fail to teach at least features of Claim 19: *"the content conversion module converts the classfiles into a graph of jop objects to track where jump operations pointed before modification of said classfiles; adjusts constant pool references from local to global numbers based on said graph; and combines the classfiles into the unified programming object".*

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (703) 308-9049. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM ET. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552.

The fax phone numbers:

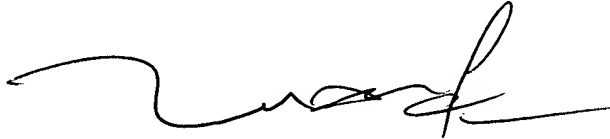(703) 872-9306 (for formal communication intended for entry);

(703) 746-5429 (for informal or draft communication, please label "PROPOSED" or "DRAFT").

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

TTV
Patent Examiner
Art Unit: 2122
July 23, 2004

TUAN DAM
SUPERVISORY PATENT EXAMINER